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ABSTRACT

A series of charts lists weekly activities for conducting a hands-on science laboratory in grades K-6. Arranged by grade level, the charts complement chapters in the "Gateways to Science" textbook series (McGraw-Hill, 1979). For each week, a concept to be explored is tagged to a 45-minute activity. This document was selected by the Association of California School Administrators Task Force on Public Confidence as descriptive of a promising practice or exemplary project worthy of highlighting for the California educational community. (LP)

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Hands-On Science Lab. K-6.

by
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KINDERGARTEN

WEEK OF	AREA OF STUDY	ACTIVITY
Sept. 26	Orientation External Senses - Taste	Discuss receptor cells that make up the taste buds. Explore four kinds of tastes - salt, sour, sweet and bitter.
Oct. 3	Smell	Discuss receptor cells on the olfactory nerves. Identify odors of four substances.
Oct. 17	Touch	Discuss tactile sense. Identify objects by shape, hardness, temperature and texture.
Oct. 31	Sight	Discuss parts of eye and importance of care of eyes. Check functions of iris and muscles.
Nov. 21	SPECIAL ACTIVITY WEEK	
Dec. 5	Sound	Discuss parts of ear. Explore how we keep our balance and how sound travels.
Jan. 9	Parts of Body	Take apart torso model. Examine skeleton.
Jan. 23	Thermometers	Discuss uses of thermometers. Examine changes in body temperature.
Feb. 6	Electricity	Identify parts of circuit. Make a simple circuit.
Feb. 20	Magnets	Identify properties of a magnet. Experiment with North and South poles. Start mold.

KINDERGARTEN

WEEK OF	AREA OF STUDY	ACTIVITY
Mar. 5	Mold	Discuss nongreen plants. Examine different kinds of mold using magnifying lenses and microprojector.
Mar. 19	Vegetable Seeds	Discuss differents parts of soil. Plant vegetable seeds in garden.
Apr. 2	Flower Seeds	Choose and plant flower seeds in garden.
Apr. 23	Physical Change	Discuss states of matter and changes of state. Work making physical changes in clay
May 7	Chemical Change	Review states of matter and changes of state. Combine substances to form new matter.
May 14	SCIENCE FAIR WEEK	
May 21	Insect Collecting	Discuss safe methods of collecting insects. Go to primary playground and collect insects.
June 4	Salad Lunch	Harvest vegetables from garden and have salad luncheon.

FIRST GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Sept. 26	1 & 2	Time - Telling Where	Demonstrate before and after. Use blocks for top, middle and bottom.
Oct. 3	3 & 4	Dandelions - Stems and Roots	Go to playground and find plants to examine. Bring in root and leaf vegetables to examine.
Oct. 17	5	Seeds	Plant beans in bags for each student. Examine other seeds from fruits and vegetables.
Oct. 31	6	Leaves	Start leaf collection. Examine leaf structure with magnifying glass and mirror.
Nov. 21		SPECIAL ACTIVITY WEEK	
Dec. 5	7	Who is Right?	Compare light and heavy (brick and feather), big and little (balls of different sizes.) To many and few, hot and cold.
Jan. 9	8	Measuring Things	Use meter sticks to measure height. Measure time, use scales.
Jan. 23	9	Temperature	Examine different thermometers Measure hot and cold water for change in temperature.
Feb. 6	10	Melting Things	Melt cubes in hot, warm and cold water. Change temperature with hand.
Feb. 20	11	Water in the Air	Demonstrate condensation and water vapor. Check for condensation on glasses.

FIRST GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Mar. 5	12	Room for Water	Measure water displacement by adding blocks.
Mar. 19	13	Mirrors	Observe reflection on different surfaces. Try tracing with a mirror.
April 2	14	Shadows	Make drawing on playground of shadows. Use projector to make shadows.
April 23	15	Power	Make a simple circuit with light and switches.
May 7	16	Magnets	Use various materials to see if attracted or repelled by magnet. Make a nail magnet.
May 14		SCIENCE FAIR WEEK	
May 21	17	Tracks	Use tracking kit to identify and make tracks.
June 4	18	Buds	Examine new growth on trees and plants at various stages.

SECOND GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Sept. 26	3	Shadows	Examine playground shadows. Make shadows from 3 angles using flashlights and projector
Oct. 3	4 & 5	Looking at Rock Putting Rocks Together	Make rocks with plaster and aquarium rocks. Examine with magnifying glass.
Oct. 17	6	Bubble Makers	Experiment with bubbles in bromthymal solution and seltzer and corn in water.
Oct. 31	7	Fun With Balloons	Make a flying balloon. Check with different size straws.
Nov. 21		SPECIAL ACTIVITY WEEK	
Dec. 5	9	Clean Water Gets Dirty	Add salt and mud to water and use filtering to clean.
Jan. 9	10	Rainbows	Discuss and observe light separation with prisms. Blow bubbles on playground.
Jan. 23	11	How Big Are Things?	Using magnifying glass and water drop lens to examine item
Feb. 6	12, 13 & 14	Is It Warm or Cold? Keeping Warm What is Hot?	Measure temperature in room. Measure temperature on land, air and water to see which cools first.
Feb. 20	15	Making Salt Disappear	Test fresh and salt water. Check floatation in salt and fresh water.

SECOND GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Mar. 5	16	Does it Float?	Check the floating ability of various materials.
Mar. 19	17	Pushing and Pulling	Discuss simple machines. Make simple lever. Measure push and pull with scales.
Apr. 2	18	Lights	Make a simple circuit and a series.
Apr. 23	19	Direction Finders	Make a simple compass and use a magnet near.
May 7	20	Trees	Examine age rings on tree round. Plant seeds from home for individual trees.
May 14		SCIENCE FAIR WEEK	
May 21	21	Growing Grass	Use ruler and magnifying glass to examine grass roots, height, etc.
June 4	23	Animals Long Ago	Look for prehistoric animals (insects) on playground. Measure the size of a dinosaur.

THIRD GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Sept. 26	1 & 2	Food and You Molds are Everywhere	Check food items for starch. Transfer mold spores.
Oct. 3	3	Earthworms	Examine worms in soil. Add water and observe. Measure worms with ruler.
Oct. 17	5	How Blood Works	Check circulatory system, pulse. Examine blood slides. Use heart and torso models.
Oct. 31	6	Find the Soil	Examine clay, sand and silt. Check plant mix. Plant individual bean plants.
Nov. 14		DISSECTING	Only students who are participating in dissecting will have lab this week.
Dec. 5	7, 8 &9	Making and Changing Rocks The Earth Moves Ferns to Coal	Discuss rock layers, examine samples. Demonstrate how the earth moves in space. Examine ferns.
Jan. 9	10	Mix and Match	Discuss primary colors of paint and light. Observe white light. Mix colors in water.
Jan. 23	11	Bright Bits of Light	Demonstrate sparks. Conduct friction and static electricit experiments.
Feb. 6	12	Shadows	Measure sizes and angles of shadows. Count by shadows. Demonstrate eclipse.
Feb. 20	13	Electricity in Circuits	Make circuit using batteries and switches. Discuss fuses and circuit breakers, conductors and insulators.

THIRD GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Mar. 5	14	Moving Things With Metal	Experiment with magnets to show how they repel and attract Effect of magnet on compass.
Mar. 19	15	How Water Works	Observe evaporation. Measure temperature at condensation. Filtering to purify water.
Apr. 2	16	Water in Holes	Experiment with sponges and cloth in water. Water and sand mixture.
Apr. 23	17	Things That Disappear in Water	Dissolve sugar in water. observe evaporation of water. Take salt from a solution.
May 7	18	Running Water	Examine water causing erosion in dirt and dirt and sand combination. Discuss irrigatic
May 14		SCIENCE AIR WEEK	
May 21	19	Guessing, Counting, and Estimating	Count beans in a cup. Estimate by sampling and using scale.
June 4	22	Where are Things?	Use a compass to follow a map. Make a map of Aliso.

FOURTH GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Sept. 26	1	Reflections	Examine reflections on mirrors, spoons and foil on cans. Observe reverse image, use flashlight on mirror.
Oct. 3	2	Light Through Lenses	Examine light passing through transparent, translucent and opaque surfaces. Observe refraction with pencil in water
Oct. 17	3	Comparing Things	Experiment with balancing using a scale. Make a simple balance scale and compare.
Oct. 31	4	Which is What?	Discuss the properties of elements. What are compounds? Tasting and touching food powders and testing for starch.
Nov. 14		DISSECTING	Only students who are participating in dissecting will have lab this week.
Dec. 5	5	Heat on the Run	Discuss conduction and heat transfer. What are good conductors. Test iron, aluminum and copper.
Jan. 9	6	Swinging Through Time	Make a simple pendulum. Measure using constants and variables.
Jan. 23	7	Bulbs and Circuits	Make a simple circuit, open and closed. Make a series and parallel circuit and salt water conductor.
Feb. 6	8	Electricity and Magnetism	Make a simple circuit. Use a compass to check the flow of current. Make an electromagnet
Feb. 20	9	The Ocean of Air	Make a simple barometer to check air pressure. Water and paper in bottle to show pressure.

FOURTH GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Mar. 5	10 & 11	What Happens to Hot Air? Water in the Air	Inflate balloon with hot air. Measure temperature during convection current experiment. Observe condensation on can checking temperature.
Mar. 19	14 & 15	Pollution of the Environment Cleaning the Environment	Discuss air and noise pollution. Examine polluted water and attempt to purify by filtering.
Apr. 2	16	Food Chains	Make a simple terrarium including plant and animal life.
Apr. 23	17	Tiny Water Life	Examine pond water for protozoa. Add chlorine to pond water and examine.
May 7	19	Life in the Cold	Collect bugs from playground and place on ice. Study results.
May 14		SCIENCE FAIR WEEK	
May 21	20	Growing Things	Examine bean seeds. Plant seeds in individual cups.
June 4	21	Plants from Parts	Examine stems, corms, rhizones tubers and bulbs.

FIFTH GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Sept. 26	1 & 2	The Producers Sorting Animals and Plants	Discuss getting food from plant Discuss photosynthesis. Make peanut butter. Start herbarium
Oct. 3	4	What Birds are Here?	Discuss counting birds and the difference of each. Use tracking kit. Discuss extinct and endangered birds.
Oct. 17	6 & 7	Holding it All Together The Inside Story	Use skeleton to discuss vertebrates. Use torso model to examine other organs. Examine effect of vinegar on milk.
Oct. 31	8	Temperature and Life	Experiment with yeast in water to form gas. Check outside body temperature. Measure wet thermometer temperature.
Nov. 14		DISSECTING WEEK	Only students who are participating in dissecting will have lab this week.
Dec. 5	11	Watching the Weather	Make a cloud chamber and a cloud. Read a weather map.
Jan. 9	12	Cool, Clear Water	Check different water sources for pollutants. Add chlorine. Filter by purifying.
Jan. 23	13	Measure and Sea	Measure distance. Check globe for longitude and latitude. Find volume of a small object.
Feb. 6	14	Here and There	Measure distance on a map. Check keys and scale. Make a map of the classroom.
Feb. 20	16	Batteries and Magnets	Make a wet cell battery and a galvonometer. Check magnetic field. Make an electromagnet.

FIFTH GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Mar. 5	17	Static Electricity	Use comb and hair to show static electricity. Charge glass and rubber rods with electrons. Make a charge detector.
Mar. 19	18	The Heat's On	Demonstrate expansion and contraction. Experiment with candles melting ice and wax.
Apr. 2	19	What's in a Mixture	Substance combined form a mixture. Separating by physica means, settling and magnet.
Apr. 23	20	Crystals from Mixtures	Make crystals from various substances.
May 7	21	Slowing the Drop	Demonstrate friction and resistance. Demonstrate water pressure. Make a Cartesian diver.
May 14		SCIENCE FAIR WEEK	
May 21	22	What do you Hear?	Discuss how sound waves travel through the air with tuning fork. Demonstrate vibration. Sound under water. Use sound boxes.
June 4	24	Light and Lenses	Discuss and examine refraction, reflection, convex and concave lenses and inverted images.

SIXTH GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Sept. 26	1	Collecting Counting and Sorting Living Things	Discuss communities and cataloging of insects collected from playground.
Oct. 3	2	Leaves and Trees	Study compound and simple leaves, evergreen and deciduous Set up identification key. Examine tree rounds.
Oct. 17	4 & 5	Fishing Around Mollusks and Friends	Examine guppies and snails. Identify parts of fish. Discus food chain of the ocean.
Oct. 31	7 & 8	Measuring Electricity Generators	Make a galvanometer to check the flow of current. Make coil and use magnet to change flow.
Nov. 14		DISSECTING WEEK	Only students who are participating in dissecting will have lab this week.
Dec. 5	9 & 11	Melting and Boiling Lightning and Thunder	Melt ice at room temperature measuring temperature and time. Check difference in wet and dry bulb thermometer. Wind dew point. Discuss water cycle.
Jan. 9	12	Distance and Time	Measure speed ball travels. Examine potential and kinetic energy.
Jan. 23	13	Quick as a Wink	Examine functions of the eye. Discuss near and far sighted. Check reaction time. Examine lenses.
Feb. 6	14	Up Hill and Down	Discuss map making. Make a contour map.
Feb. 20	15	Layers of the Earth	Examine layers of earth. Recreate layers. Examine fossils.

SIXTH GRADE

WEEK OF	CHAPTER	TITLE	ACTIVITY
Mar. 5	16	Earthquakes and Volcanoes	Discuss Mt. St. Helens volcano, see slides and discuss ring of fire. Do Earth crust experimen
Mar. 19	17	Black Gold	Discuss fossil fuel. Do oil and water experiment.
Apr. 2	18	Archeology	Examine and record a sample dig.
Apr. 23	19	Going Around With Carbon	Discuss the carbon cycle and carbon dating. Do limewater test. Heat and eat marshmallow.
May 7	20	Steel, Rust and Ore	Demonstrate smelting. Do copper plating. Start rust.
May 14		SCIENCE FAIR WEEK	
May 21	22	Estimating Numbers	Experiment with estimating, halving and sampling.
June 4	23	Telling Everyone	Investigate various ancient writing systems. Create a code. Discuss elements and formulas.